



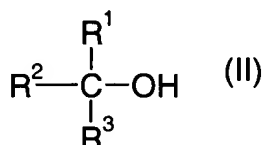
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Revised Claims

TECH CENTER 1600/2900

1. A process for the preparation of 3-isochromanone which comprises contacting an o-xylene- α,α' -dihalide with carbon monoxide, in the presence of a catalyst and a hindered amine base in a liquid medium comprising water and a tertiary alcohol, the molar ratio of water:tertiary alcohol being in the range of 1:1 to 20:1.
2. A process according to claim 1 in which the o-xylene- α,α' -dihalide is o-xylene- α,α' -dichloride.
3. A process according to claim 1 or 2 in which the tertiary alcohol is an alcohol of formula (II):



in which R^1 , R^2 and R^3 are independently C_{1-8} alkyl, one or more of R^1 , R^2 and R^3 being optionally substituted with a phenyl ring or a hydroxyl group, the hydroxyl group being attached to a carbon atom which is itself directly attached to three other carbon atoms.

4. A process according to claim 3 in which the tertiary alcohol is tert-amyl alcohol or tert-butanol.
6. A process according to claim 3 in which the molar ratio of water:o-xylene- α,α' -dihalide is in the range of 100:1 to 1:1.
7. A process according to claim 3 in which the amine base is an amine of formula $\text{R}^1\text{R}^2\text{R}^3\text{N}$ wherein R^1 , R^2 and R^3 are independently C_{1-10} alkyl, C_{3-6} cycloalkyl, aryl or aryl(C_{1-4})alkyl or wherein two or three of R^1 , R^2 and R^3 join together with the nitrogen atom to which they are attached to form one, two or three, 5-, 6- or 7- membered alicyclic rings optionally fused and optionally containing a second ring nitrogen atom.

8. A process according to claim 3 in which the molar ratio of amine base:o-xylene- α,α' -dihalide is in the range of 10:1 to 1:1.
9. A process according to claim 1 in which an inorganic base is used in conjunction with the amine base, the total amount of base used being at least 1 mole per mole of o-xylene- α,α' -dihalide.
10. A process according to claim 3 in which the catalyst is a palladium catalyst.

11. A process according to claim 3 in which the catalyst is present in the amount of 0.000001 to 0.5 mole equivalents of the o-xylene- α,α' -dihalide.

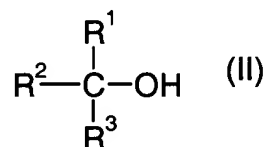
12. A process according to claim 10 in which a triphenylphosphine ligand is used in combination with the palladium catalyst in the range of from 1 to 200 mole equivalents of phosphorous to palladium.
13. A process according to claim 12 in which the triphenylphosphine ligand and palladium catalyst are used in a preformed mixture.
14. A process according to claim 3 in which there is present a phase transfer catalyst.
15. A process according to claim 3 which is carried out at a temperature of from 20°C to 200°C.

Copy of Claims Showing Revisions

1. A process for the preparation of 3-isochromanone which comprises contacting an o-xylene- α,α' -dihalide with carbon monoxide, in the presence of a catalyst and a hindered amine base in a liquid medium comprising water and a tertiary alcohol, the molar ratio of water:tertiary alcohol being in the range of 1:1 to 20:1.

2. A process according to claim 1 in which the o-xylene- α,α' -dihalide is o-xylene- α,α' -dichloride.

3. A process according to claim 1 or 2 in which the tertiary alcohol is an alcohol of formula (II):



in which R^1 , R^2 and R^3 are independently C_{1-8} alkyl, one or more of R^1 , R^2 and R^3 being optionally substituted with a phenyl ring or a hydroxyl group, the hydroxyl group being attached to a carbon atom which is itself directly attached to three other carbon atoms.

4. A process according to claim 3 in which the tertiary alcohol is tert-amyl alcohol or tert-butanol.
5. [A process according to claim 3 or 4 in which the molar ratio of water:tertiary alcohol is in the range of 1:50 to 50:1.]
6. A process according to claim 3 [or 4] in which the molar ratio of water:o-xylene- α,α' -dihalide is in the range of 100:1 to 1:1.
7. A process according to [any one of the preceding claims] claim 3 in which the amine base is an amine of formula $\text{R}^1\text{R}^2\text{R}^3\text{N}$ wherein R^1 , R^2 and R^3 are independently C_{1-10} alkyl,

C₃₋₆ cycloalkyl, aryl or aryl(C₁₋₄)alkyl or wherein two or three of R¹, R² and R³ join together with the nitrogen atom to which they are attached to form one, two or three, 5-, 6- or 7- membered alicyclic rings optionally fused and optionally containing a second ring nitrogen atom.

8. A process according to [any one of the preceding claims] claim 3 in which the molar ratio of amine base:o-xylene- α,α' -dihalide is in the range of 10:1 to 1:1.
9. A process according to [any one of claims 1 to 7] claim 3 in which an inorganic base is used in conjunction with the amine base, the total amount of base used being at least 1 mole per mole of o-xylene- α,α' -dihalide.
10. A process according to [any one of the preceding claims] claim 3 in which the catalyst is a palladium catalyst.
11. A process according to [any one of the preceding claims] claim 3 in which the catalyst is present in the amount of 0.000001 to 0.5 mole equivalents of the o-xylene- α,α' -dihalide.
12. A process according to claim 10 in which a triphenylphosphine ligand is used in combination with the palladium catalyst in the range of from 1 to 200 mole equivalents of phosphorous to palladium.
13. A process according to claim 12 in which the triphenylphosphine ligand and palladium catalyst are used in a preformed mixture.
14. A process according to [any one of the preceding claims] claim 3 in which there is present a phase transfer catalyst.
15. A process according to [any one of the preceding claims] claim 3 which is carried out at a temperature of from 20°C to 200°C.